

*If you are using a printed copy of this procedure, and not the on-screen version, then you **MUST** make sure the dates at the bottom of the printed copy and the on-screen version match.
The on-screen version of the Collider-Accelerator Department Procedure is the Official Version.
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C-A OPERATIONS PROCEDURES MANUAL

12.36 Setup for Target Room Operation

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Hand Processed Changes

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Approved: _____ ***Signature on File*** _____
Collider-Accelerator Department Chairman Date

M. Wiplich

12.36 Setup for Target Room Operation

1. Purpose

The purpose of this procedure is to define the sequence of activities required to set up the facility for target room operation.

2. Responsibilities

It is the responsibility of the person or persons executing this procedure to observe all safety rules.

3. Prerequisites

The person or persons executing this procedure shall have all formal training required of a TVDG Operator.

4. Precautions

None

5. Procedure

5.1 If converting from TtB operation to Target Room operation

5.1.1 Use the Checklist given in [TtB to Target Room Check List](#)

5.1.2 Lock out 11DH02. See [11DH02 Lockout Tagout Form](#)

5.1.3 Close TtB Vacuum Valve 10VP027.

5.1.4 Set HVEC Object Slits at 150 square.

5.1.5 Connect Slit Amplifiers to HVEC Image Slits.

5.2 Prior to setting up a beam line in any target room or in TtB, determine the status of the previously used beam line. If the previously used beam line is not to be used in the near future, shut down all unnecessary systems related to that beam line.

5.3 Changing Beam Plugs

5.3.1 Close the Image Gate Valve.

5.3.2 Set the toggle switch on Beam Plug Control Box to IN. The beam plug should go in.

5.3.3 Connect the Beam Plug Control Box to the beam plug that is to be removed.

- 5.3.4 Set the switch on the Beam Plug Control Box to OUT. The beam plug should come out.
- 5.3.5 When Switcher vacuum stabilizes, open the Image Gate Valve.
- 5.4 If the Tandem Program displays the message "!!WARNING!! Possible Radiation: nn.nn MeV/AMU" for the beam that is to be delivered, proceed as follows:

<p style="text-align: center;"><u>Note:</u> Do not allow experimenters into the Target Room until the following steps have been completed.</p>

- 5.4.1 Set the HE Zones prior to putting beam into the machine.
- 5.4.2 After beam verification, allow beam into the Target Room. Adjust the beam current or beam flux to the maximum anticipated level to be run during the experiment.
- 5.4.3 Survey the Target Room for radiation and note the location(s) of any areas where radiation is above background.
- 5.4.4 Insure that the Target Room is posted as a 'Radiation Area'.

<p style="text-align: center;"><u>Caution:</u> If the user work areas exhibit radiation in excess of 5 mr/hr, do not allow the users to occupy the Target Room.</p>
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- 5.4.5 All parts and equipment exposed to the beam shall be surveyed prior to removal from the premises.
- 5.5 Special instructions for Proton Runs
 - 5.5.1 The Target Room shall be posted as a "Radiation Area" prior to beam delivery into the target room.
 - 5.5.2 The Vacuum Chamber and associated Beam Line shall be posted as "Activation Areas".
 - 5.5.3 Users with "Visitor TLD Badges" are not to be permitted in the target room unescorted.

5.5.4 Prior to beam setup and delivery, the following radiation safety systems should be activated:

5.5.4.1 MP-7 L.E. and MP-7 H.E. zones should be set.

5.5.4.2 The Target Room Shielding Door should be fully closed.

5.5.4.3 The Target Room Guardian should be set.

5.5.5 During the run, initial entry into the target room should only be by Tandem personnel equipped with Radiation Survey Equipment. Users with "Visitor TLD Badges" should only be allowed into the target room if the target room has been determined safe by Tandem personnel and only while escorted.

5.5.6 Any equipment or material that was in the target room during beam delivery shall be surveyed and deemed radiologically safe, prior to its removal from the target room. Use the 'User Training/CheckList Form' to record survey readings.

6. Documentation

6.1 Record survey readings on the "User Training/Checklist Form".

7. References

- 7.1 TtB to Target Room Check List
- 7.2 11DHO2 Lockout Tagout Form
- 7.3 User Training/Checklist Form

8. Attachments

None